Remarks:

These remarks are responsive to the Office action dated January 10, 2005. Prior to the entry of this amendment, claims 1-31 remain pending in the application.

The Specification

The disclosure is objected to because it does not include sections entitled "Field of the Invention" and "Brief Summary of the Invention." Applicants note, however, that such sections are not required by the rules. Rule 77 (37 C.F.R. § 1.77) prescribes the order of subparts of an application. It does not require that an application include all of the listed subparts. In fact, the PTO has noted that the phrase "if applicable" is inserted in the heading, rather than associated with any particular listed element, to clarify that § 1.77 does not per se require that an application include all of the listed elements, but merely provides that any listed element included in the application should appear in the order set forth in § 1.77." See, 61 Fed. Reg. at 42793. The objection to the disclosure thus should be withdrawn.

The Claims

First considering formal matters, applicants note that claims 3 and 4 are objected to because of the absence of a period at the end of each claim. Appropriate correction has been made.

Allowable Subject Matter

Applicants initially note, with appreciation, that claims 11 and 12 have been indicated allowable if rewritten in independent form. Applicants have amended claims 11 and 12 to place such claims in allowable form.

Rejections Under 35 U.S.C. § 102(b)

Claims 1-7, 9, 10, 13-25 and 27-31 stand rejected under 35 U.S.C. § 102(b) based on Richardson et al. (US 5,748,483). Applicants respectfully disagree.

Richardson et al. discloses a modular printing system including a printer module and a collator module. The collator module includes sensors configured "to detect erroneously processed sheets." In operation, a feed assembly presents sheets to the printer module, which also includes sensors configured "to detect erroneously processed sheets." Each module includes a controller configured "to generate an error signal in response to detection of an error." The printing system further includes a system controller configured to "generate error-recovery signals in response to error signals generated by the collator and printer controllers."

Richardson et al. does not disclose monitoring a state of a print process module, and does not disclose setting a current state of a print process module to a default condition. In fact, Richardson et al. is focused entirely on the processed sheets. Richardson et al. does not even consider the state of the modules themselves. The prospect of paper-jamming is only peripherally discussed in relation to erroneously processed sheets.

Although Richardson et al. does describe a system controller that produces error-recovery signals in response to error signals generated by the printer and collator modules, there is no mention of such signals addressing errors in the modules. At best, Richardson et al. suggest the use of "sheet diverters" to avoid existing paper jams. There is no mention of error-recovery signals being effective to set a current state of either module to a default state. In fact, Richardson et al.'s

proposed use of "sheet diverters" is contra to the principal of resetting the current state of a module to a default state in order to correct an error.

Furthermore, Richardson et al. fails to disclose or suggest any event history queue, and correspondingly fails to disclose or suggest any examination of event history in determining whether conditions of a predetermined rule are met. While Richardson et al. does consider generating of job lists, such job lists cannot be considered event history queues. Again, Richardson et al. considers only the existence of "erroneously processed sheets."

Referring initially to Fig. 1, which recites a method of correcting an exception during a printing process at least partially controlled by a plurality of print process modules associated with a printing device, wherein the method includes: monitoring, from a self-correcting module, a state of each of a plurality of the print process modules, wherein the print process modules interact according to a set of rules to control the printing process; determining that an event has occurred; and setting a current state of the at least one print process module to a default condition. As noted above, Richardson et al. fails to disclose or suggest monitoring a state of each of a plurality of print process modules from a self-correcting module, and fails to disclose or suggest setting a current state of a print process module to a default condition.

Contrary to the Examiner's assertion, generating the error-recovery signals described by Richardson et al. are not "the same as setting the system to default condition" (applicants also note that claim 1 actually recites setting a current state of the print process module to a default condition). Richardson et al. actually proposes use of "sheet diverters," and thus specifically proposes an alternative to the default

condition of the printing system. Claim 1 thus is allowable over Richardson et al, and the rejection of claim 1 under 35 U.S.C. § 102(b) should be withdrawn.

Claims 2-10 and 13 depend from claim 1, and thus are allowable for at least the same reasons as claim 1. The rejection of claims 2-10 and 13 under 35 U.S.C. § 102(b) thus should also be withdrawn.

Regarding claims 4-6, applicants further note that Richardson et al. does not disclose or suggest receiving a status message from each of the print process modules into a global event history queue (claim 4), does not disclose or suggest examining such global event history queue to determine whether the conditions of a predetermined rule are met (claim 5), and does disclose or suggest verifying that the conditions of the rule remain satisfied over a predetermined period of time (claim 6).

Although the Examiner asserts that Richardson et al.'s generation of job lists provide global event history, this interpretation is not supported by Richardson et al., or the Examiner's own interpretation of "event" (the Examiner argues on page 9 of the present Office action that "an event is the same as "an exception" and "an exception" is the same as "an error condition or state"..."). Richardson et al.'s job lists do not provide any history of errors, and Richardson et al. does not propose considering such job lists in determining whether conditions of a predetermined rule are met. Richardson et al. similarly fails to consider event history in verifying that conditions of a rule remain satisfied over a predetermined period of time. The rejection of claims 4-6 under 35 U.S.C. § 102(b) should be withdrawn for these reasons, as well as those set forth above in reference to claim 1.

Regarding claim 7, applicants note that Richardson et al. fail to disclose or suggest setting a current state of a print process module to a default condition by sending a reset command to the print process module. To the contrary, Richardson et al. proposes use of "sheet diverters" to address erroneously processed sheets. The rejection of claim 7 under 35 U.S.C. § 102(b) should be withdrawn for this reason, as well as those set forth above in reference to claim 1.

Claim 14 recites a method of correcting an exception during a printing process in a printing device, the method including: monitoring a current state of a plurality of print process modules in the printing device, the print process modules being configured to at least partially control the printing process; determining an expected state of at least one print process module; comparing the current state to an expected state of the at least one print process module; detecting a discrepancy between the current state and the expected state; and setting the current state of the at least one print process module to a default condition.

As noted above, Richardson et al. fails to disclose or suggest monitoring a current state of plural print process modules, and fails to disclose or suggest setting the current state of the at least one print process module to a default condition. Moreover, Richardson et al. fails to disclose or suggest any determination of an expected state of a print process module, and fails to disclose or suggest any comparison of a current state to an expected state. The Examiner cites language in Richardson et al. related to determining whether the proper type of media is fed by reading bar codes on the media. There is no disclosure or suggestion, however, of determining an expected state of a print process module as recited in claim 14. For

at least the foregoing reasons, claim 14 is allowable over Richardson et al. and the rejection of claim 14 under 35 U.S.C. § 102(b) should be withdrawn.

Claims 15-20 depend from claim 14, and thus are allowable over Richardson et al. for at least the same reasons as claim 14. The rejection of claims 15-20 under 35 U.S.C. § 102(b) thus also should be withdrawn.

Claim 21 recites a self-correcting printing system comprising a printing device having an instruction set including: a plurality of print process modules configured to at least partially control a printing process in the printing device; a self-correcting module including: a module status monitor configured to monitor a current state of at least a plurality of print process modules of the instruction set; a plurality of event rules that describe a manner in which the plurality of print modules interact; an event history configured to store information relating to a state of the print process modules; a hang detector configured to detect a hang condition among the plurality of print process modules based on the event history and event rules; and a correction mechanism configured to change the current state of the at least one print process module to a default state, upon detection of the hang condition.

As noted above, Richardson et al. does not disclose or suggest monitoring a current state of plural print process modules, does not disclose storing event history of the print process modules, and does not disclose or suggest changing the current state of the at least one print process module to a default state upon detection of a hang condition. For at least the foregoing reasons, claim 21 is allowable over Richardson et al. and the rejection of claim 21 under 35 U.S.C. § 102(b) should be withdrawn.

Claims 22-25, 27 and 28 depend from claim 21, and thus are allowable for at least the same reasons as claim 21. The rejection of claims 22-25, 27 and 28 under 35 U.S.C. § 102(b) thus also should be withdrawn.

Claim 29 recites a computer program product including: a computer usable medium having computer readable program code embodied therein for causing correction of an exception condition within firmware of a printing device, the computer readable program code in said computer program product including: computer readable program code configured to cause the printing device to determine a current state of at least one module of the firmware; computer readable program code configured to cause the printing device to compare the current state to an expected state; computer readable program code configured to cause the printing device to detect a discrepancy between the current state and the expected state; and computer readable program code configured to cause the printing device to set the current state to a default condition.

Richardson et al. fails to disclose or suggest determining a current state of at least one module of the firmware, and fails to disclose or suggest setting the current state to a default condition. Moreover, Richardson et al. fails to disclose or suggest any determination of an expected state, and fails to disclose or suggest any detection of discrepancy between the current state and an expected state. For at least the foregoing reasons, claim 29 is allowable over Richardson et al. and the rejection of claim 29 under 35 U.S.C. § 102(b) should be withdrawn.

Claims 30 and 31 depend from claim 29, and thus are allowable for at least the same reasons as claim 29. The rejection of claims 30 and 31 under 35 U.S.C. § 102(b) thus also should be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

Claim 8 stands rejected under 35 U.S.C. § 103(a) based on Richardson in view of Kim (Pub. No. US 2003/0095279 A1). Applicants respectfully disagree.

The Examiner asserts that Richardson et al. is silent about "resending at least a portion of the print job to the at least one print process module" as recited in claim 8. The Examiner thus cites Kim. Kim, however, describes method and apparatus to reprint print data wherein the user reprints data. As amended, claim 8 recites "automatically resending at least a portion of the print job to the at least one print process module." The rejection of claim 8 under 35 U.S.C. § 103(a) based on Richardson in view of Kim thus should be withdrawn.

Claim 26 stands rejected under 35 U.S.C. § 103(a) based on Richardson in view of Farrell (US 5,179,410). Applicants respectfully disagree. Farrell adds nothing to the discussion above concerning claim 21 (from which claim 26 depends). Claim 26 thus is allowable for at least the same reasons as set forth with respect to claim 21 above. The rejection of claim 26 under 35 U.S.C. § 103(a) based on Richardson in view of Farrell thus should be withdrawn.

Conclusion

Applicants believe that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, applicants respectfully request that the Examiner issue a Notice of Allowability covering the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned attorney of record.

Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to Examiner W. Hamdan, Group Art Unit 2854, Assistant Commissioner for Patents, at facsimile number (703) 872-9306 on April 11, 2005.

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